

Laparoscopically Assisted Surgery for Colonic Perforation with Peritonitis - A Case Report

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ABSTRACT

Elective laparoscopic colonic surgery is increasingly recognized as feasible and perhaps preferential. A case of laparoscopically assisted surgery for trauma to the rectum with bacterial peritonitis is presented. It presents an example of the application of this modality to the treatment of iatrogenic colon perforations and perhaps selected diverticulitis.

Key Words: Laparoscopy, Colon trauma, Peritonitis.

INTRODUCTION

Laparoscopic surgery of the prepared upper and lower gastrointestinal (GI) tract has been well reported.¹ Successful closure of ruptured duodenal ulcers² associated with peritoneal soiling has demonstrated that laparoscopic techniques can be applied to repair of the perforated viscus. More controversial is the therapeutic role of laparoscopic surgical techniques in perforations of the lower GI tract.

MATERIALS AND METHODS

M.D., a 24-year-old male, presented with an injury sustained when he fell upon a pneumatic jack-hammer. Upon his arrival in the emergency room, his only complaint was that of perianal pain. He was found to have a single complex laceration involving the perianal skin, subcutaneous tissue and completely lacerating the internal sphincter and the lower 4 cm of the rectum. The patient remained in the emergency room for two hours prior to being taken to the operating room holding area. There, he was found to have developed a complaint of generalized abdominal pain and findings of tachycardia and peritoneal signs. A cross-table abdominal x-ray revealed the presence of free air. A proctoscopic examination revealed a transmural laceration of the anterior aspect of the rectum at 6 cm. No further studies were performed as it was felt that a patient with evolving peritoneal signs, penetrating trauma and free air needed to be explored.

Under general anesthesia, a Foley catheter was placed and clear urine drained. A transanal, single layer repair of the rectum was performed entirely via transanal approach, with continuous sutures of polyglycolic acid. The external sphincter and cutaneous margins of the complex laceration were then approximated with interrupted polyglycolic acid sutures. Following this, laparoscopy was then performed.

Laparoscopic entry to the abdomen was obtained at the umbilicus by the open Hasson technique. Two further 10 mm trocars were placed, one in each lower quadrant. A small volume of bloody serous fluid was noted in the pelvis and was aspirated and submitted for culture. Using atraumatic bowel graspers (Snowden-Pencer), the small bowel was run from the ligament of Trietz to the ileo-cecal valve and no injury was detected. The patient was placed in a steep Trendelenburg position and the pelvis explored. A

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tear was present in the fascia between the bladder and the rectum. The bladder appeared intact upon inspection and, on gentle elevation of the bladder flap, the repaired rectal tear was visualized. No other injury could be identified. The pelvis was copiously irrigated with an antibiotic solution. No air leak was present. Via the left lower quadrant trocar site, a Jackson-Pratt drain was placed and positioned along the sigmoid gutter into the pelvis. The anal sphincter was repaired with polyglycolic acid sutures.

The patient was placed on empiric therapy with imipenem and was observed in the ICU. He was further evaluated by the Urology service with a voiding cystourethrogram which was normal. Cultures of the peritoneal cavity revealed gram negative rods which proved to be *e. coli*. His white blood count, 17,000 upon admission, decreased progressively and he was transferred from the ICU. The patient passed flatus on postoperative day (POD) 3 and was allowed clear liquids. The drain was producing only small amounts of serous fluid following his first stools and was removed on POD 5.

RESULTS

His recovery at home was uneventful other than the development of a keyhole deformity of the anus which was repaired, uneventfully, six weeks later. There was no loss of sexual function or change in voiding or bowel habits, and he has since returned to work without disability.

DISCUSSION

The laparoscopic approach to a perforated viscus has been described. It is recognized as an appropriate means to treat perforated gastric and duodenal ulcers.² Less well described, and more controversial, is its use in the treatment of acute lower GI pathology, including perforation.^{3,4}

The approach to the issue of right vs. left-sided colonic perforation and the creation of a temporary stoma vs. primary resection or repair has evolved to the point where recent papers⁵ describe primary resection or repair without colostomy as the method of choice in selected left colon injuries.

Our patient presented with penetrating trauma to an unprepped left colon and bacterial peritonitis. While the perforation proved to be amenable to transanal closure, laparoscopy offered the opportunity to inspect the pelvic and abdominal organs, irrigate the abdomen, place a drain and test the integrity of the suture line.

Our experience in laparoscopic colon surgery would have allowed sutured or stapled closure, or resection, with or without colostomy, should the injury have been more proximal or associated with more extensive tissue damage or gross soilage.

This result would certainly agree with the suggestion by others⁶ that the laparoscopic approach be considered first in dealing with an expected single perforation from iatrogenic injury during colonoscopy and may suggest that a subset of perforated diverticulitis patients may exist in whom the standard two-stage Hartmann procedure, and its resultant disability, may prove unnecessary.

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